

pachometer—nondestructive testing device commonly used to detect and locate embedded reinforcing steel; the device emits an electromagnetic field and detects disturbances in the field caused by embedded metals.

pack, dry—concrete or mortar mixtures deposited and consolidated by dry packing.

pack, warehouse—see set, warehouse.

pack set—see cement, sticky and set, warehouse.

packaged concrete, mortar, grout—mixtures of dry ingredients in packages, requiring only the addition of water to produce concrete, mortar, or grout.

packer—an expandable device inserted into a hole to be grouted that prevents the grout from flowing back around the injection pipe; usually an expandable device actuated mechanically, hydraulically, or pneumatically.

packerhead process—see process, packerhead.

packing, dry—placing of zero-slump or near zero-slump concrete, mortar, or grout by ramming into a confined space.

paddle mixer—see mixer, open-top (preferred term).

paint, cement—a paint consisting generally of white Portland cement and water, pigments, hydrated lime, water repellents, or hygroscopic salts.

paint, cold-water—a paint in which the binder or vehicle portion is composed of latex, casein, glue, or some similar material dissolved or dispersed in water.

Palladiana—see Berliner.

pan—(1) a prefabricated form unit used in concrete joist floor construction; and (2) a container that receives particles passing the finest sieve during mechanical analysis of granular materials.

pan mixer—see mixer, vertical shaft (preferred term).

panel—(1) a section of form sheathing, constructed from boards, plywood, metal sheets, etc., that can be erected and stripped as a unit; and (2) a concrete member, usually precast,

rectangular in shape, and relatively thin with respect to other dimensions.

panel, drop—the thickened structural portion of a flat slab in the area surrounding column, column capital, or bracket, to reduce the intensity of stresses.

panel, exterior—in a flat slab, a panel having at least one edge that is not in common with another panel.

panel, ribbed—a panel composed of a thin slab reinforced by a system of ribs in one or two directions, usually orthogonal.

panel, sandwich—a prefabricated panel that is a layered composite, formed by attaching two thin facings to a thicker core, for example, a precast-concrete panel consisting of two layers of concrete separated by a nonstructural insulating core.

panel, solid—a solid slab, usually of constant thickness.

panel strip—see strip, panel.

paper form—see form, paper.

parallel-wire unit—a post-tensioning tendon composed of a number of wires or strands that are approximately parallel.

parapet—the part of a wall that extends above the roof level; a low wall along the top of a dam.

parge—to coat with plaster, particularly foundation walls and rough masonry. (See also back plastering)

partial prestressing—see prestressing, partial.

partial release—see release, partial.

partial-depth repair—see repair, partial-depth.

particle shape—the form of a particle. (See also cubical piece [of aggregate]; elongated piece [of aggregate]; and flat piece [of aggregate].)

particle-size distribution—see grading.

particulate grout—see grout, particulate.

parting agent—see agent, release.

pass—a layer of shotcrete placed in one movement over the area of operation.

passivating layer—thin and tightly adhered oxide film on a metal surface that protects a metal against active corrosion.

paste—see cement paste, neat.

paste, cement—binder of concrete and mortar consisting essentially of cement, water, hydration products and any admixtures together with very finely divided materials included in the aggregates. (See also cement paste, neat.)

paste content—proportional volume of cement paste in concrete, mortar, or the like, expressed as volume percent of the entire mixture. (See also cement paste, neat.)

paste volume—see paste content.

pat—a specimen of neat cement paste, approximately 3 in. (76 mm) in diameter and 1/2 in. (13 mm) in thickness at the center and tapering to a thin edge, on a flat glass plate for indicating setting time.

path of prestressing force—the locus of points defining the resultant effective prestress force in a concrete member.

pattern cracks—see cracks, craze and cracking, map.

patterned ashlar—see masonry, ashlar.

pavement (concrete)—a layer of concrete on such areas as roads, sidewalks, canals, playgrounds, and those used for storage or parking. (See also pavement, rigid.)

pavement, flexible—a pavement structure that maintains intimate contact with and distributes loads to the subgrade and depends on aggregate interlock, particle friction, and cohesion for stability; cementing agents, where used, are generally bituminous materials as contrasted to hydraulic cement in the case of rigid pavement. (See also pavement, rigid.)

pavement, rigid—pavement that will provide high bending resistance and distribute loads to the foundation over a comparatively large area.

paver, concrete—(1) a concrete mixer, usually mounted on crawler tracks, that mixes and places concrete pavement on the subgrade; or (2) precast-concrete paving brick.

paving train—an assemblage of equipment designed to place and finish a concrete pavement.

pea gravel—screened gravel, most of the particles of which pass a 3/8 in. sieve (9.5 mm) and are retained on a No. 4 sieve (4.75 mm).

pedestal—an upright compression member whose height does not exceed three times its average least dimension, such as a short pier or plinth used as the base for a column.

pedestal pile—see pile, pedestal.

peeling—a process in which thin flakes of mortar are broken away from a concrete surface, such as by deterioration or by adherence of surface mortar to forms as forms are removed.

pencil rod—see rod, pencil.

penetration—an opening through which pipe, conduit, or other item passes through a wall or floor.

penetration grouting—see grouting, penetration.

penetration probe—see probe, penetration.

penetration resistance—see resistance, penetration.

penetrating sealer—material that has the ability to penetrate and seal the surface to which it is applied. (See also sealing compound.)

percentage of reinforcement—the ratio of cross-sectional area of reinforcing steel to the effective cross-sectional area of a member, expressed as a percentage.

percussion drilling—a drilling process in which a hole is advanced by using a series of impacts to the drill steel and attached bit; the bit is normally rotated during drilling. (See also rotary drilling.)

performance monitoring—monitoring of the performance of a structure, typically through nondestructive methods and/or instrumentation with the objective of identifying or monitoring progressing distress or deterioration.

periclase—a crystalline mineral, magnesia, MgO, the equivalent of which may be present in portland-cement clinker, portland cement, and other materials, such as open-hearth slags and certain basic refractories.

perimeter grouting—see grouting, perimeter.

period—

period, precuring—see period, presteaming (preferred term).

period, presteaming—in the manufacture of concrete products, the time between molding of a concrete product and start of the temperature-rise period.

period, soaking—in high-pressure and low-pressure steam curing, the time during which the live steam supply to the kiln or autoclave is shut off and the concrete products are exposed to the residual heat and moisture.

period, temperature-rise—the time interval during which the temperature of a concrete product rises at a controlled rate to the desired maximum in autoclave or atmospheric-pressure steam curing.

period at maximum temperature—see maximum-temperature period.

perlite—a volcanic glass having a perlitic structure, usually having a higher water content than obsidian; when expanded by heating, used as an insulating material and as a lightweight aggregate in concretes, mortars, and plasters.

perlitic structure—a structure produced in a homogeneous material by contraction during cooling and consisting of a system of irregular convolute and spheroidal cracks; generally confined to natural glass.

perm—the mass rate of water vapor flow through one square foot of a material or construction of one grain per hour induced by a vapor pressure gradient between two surfaces of one inch of mercury or in units that equal that flow rate.

permanent form—see form, permanent.

permanent set—see set, permanent.

permeability—the property of porous material that permits a fluid (or gas) to pass through it; in construction, commonly refers to water vapor permeability of a sheet material or assembly and is defined as water vapor permeance per unit thickness. (See also water vapor transmission; perm; and permeance.)

permeability to water, coefficient of—the rate of discharge of water under laminar flow conditions through a unit cross-sectional area of a porous medium under a unit hydraulic gradient and standard temperature conditions, usually 68 °F (20 °C).

permeance (water vapor)—the ratio of the rate of water vapor transmission through a material or assembly between its two parallel surfaces to the vapor pressure differential between the surfaces. (See also water vapor transmission, permeability, and perm.)

permeation grouting—see grouting, permeation.

pessimum—worst; the opposite of optimum.

petrographic examination—methods of examining nonmetallic matter under suitable microscopes to determine structural relationships and to identify the phases or minerals present; with opaque materials, the color, hardness, reflectivity, shape, and etching behavior in polished sections serve as means of identification.

petrography—the branch of petrology dealing with description and systematic classification of rocks aside from their geologic relations, mainly by laboratory methods, largely chemical and microscopical; also, loosely, petrology or lithology; also the techniques and knowledge of petrography applied to mortar, concrete, and the like.

petrology—the science of rocks, treating their origin, structure, composition, etc., from aspects and in all relations. (See also petrography.)

pH—a measure of the acidity or alkalinity of a solution, with neutrality represented by a value of 7, with increasing acidity represented by increasingly smaller values and with increasing alkalinity represented by increasingly larger values.

phenolic resin—see resin, phenolic.

phi (ϕ) factor—see factor, strength-reduction (preferred term).

Philleo factor—see factor, Philleo.

photometer, flame—an instrument used to determine elements (especially sodium and potassium in portland cement) by the color intensity of their unique flame spectra resulting from introducing a solution of a compound of the element into a flame (also known as flame spectrophotometer.)

pier—isolated foundation member of either plain or reinforced concrete.

 pier, drilled—a concrete pier with or without a casing, cast-in-place in a hole previously bored in soil or rock. (See also pile, cast-in-place.)

pigment—an insoluble fine powder mixed with water, oil, or other base that creates color.

pilaster—column built with a wall, usually projecting beyond the wall.

pilaster face—see face, pilaster.

pilaster side—see side, pilaster.

pile—a timber, concrete, or steel structural element, driven, jetted, or otherwise embedded on end in the ground for the purpose of supporting a load or compacting the soil. (See also pile, composite.)

 pile, batter—a pile installed at an angle to the vertical; a raking pile or raker pile.

 pile, bored—see pier, drilled.

 pile, caisson—a cast-in-place pile made by driving a tube, excavating it, and filling the cavity with concrete.

 pile, cast-in-place—a concrete pile concreted either with or without a casing in its permanent location, as distinguished from a precast pile. (See also pier, drilled and pile, precast.)

 pile, composite—a pile made up of different materials, usually concrete and wood, or steel fastened together end to end, to form a single pile.

 pile, concrete—see pile, cast-in-place and pile, precast.

pile, drilled—see pier, drilled.

pile, friction—a load-bearing pile that receives its principal vertical support from skin friction between the surface of the buried pile and the surrounding soil.

pile, pedestal—a cast-in-place concrete pile constructed so that concrete is forced out into a widened bulb or pedestal shape at the foot of the pipe that forms the pile.

pile, pipe— a steel cylinder, usually between 10 and 24 in. (250 and 600 mm) in diameter, generally driven with open ends to firm bearing and then excavated and filled with concrete.

pile, precast—a reinforced pile manufactured in a casting plant or at the site but not in its final position. (See also pile, cast-in-place.)

pile, raking—see pile, batter (preferred term).

pile, sheet—a pile in the form of a plank driven in close contact or interlocking with others to provide a tight wall to resist the lateral pressure of water, adjacent earth, or other materials; may be tongued and grooved if made of timber or concrete and interlocking if made of metal.

pipe, vent —a small-diameter pipe used in concrete construction to permit escape of air in a structure being concreted or grouted.

pile, wing—a bearing pile, usually of concrete, widened in the upper portion to form part of a sheet pile wall.

pile bent—see bent, pile.

pile cap—see cap, pile.

pinhole—a coating defect characterized by minute holes through a coating that expose an underlying coat or the substrate.

pipe pile—see pile, pipe.

pitting—development of relatively small surface cavities, such as popouts in concrete or corrosion in steel.

placeability—see workability.

placement—the process of placing and consolidating concrete; a quantity of concrete placed and finished during a continuous operation; inappropriately referred to as pouring.

placing—the deposition, distribution, and consolidation of a freshly mixed concrete repair material in the place where it is to harden; inappropriately referred to as pouring.

plain bar—see bar, plain.

plain concrete—see concrete, plain.

plain masonry —see masonry, plain.

plane of weakness—the plane along which a composite repair system tends to fracture; may exist by design, by accident, or because of the nature of the structure and its loading.

plaster—a cementitious material or combination of cementitious material and fine aggregate that, when mixed with a suitable amount of water, forms a plastic mass or paste that when applied to a surface, adheres to it and subsequently hardens, preserving in a rigid state the form or texture imposed during the period of plasticity; also the placed and hardened mixture. (See also stucco.)

plaster, neat—plaster devoid of sand.

plaster mold—see mold, plaster.

plastic—possessing plasticity, or possessing adequate plasticity. (See also plasticity.)

plastic cement—See cement, plastic.

plastic centroid—centroid of the resistance to load computed for the assumptions that the concrete is stressed uniformly to 85% of its design strength, and the steel is stressed uniformly to its specified yield point.

plastic consistency—see consistency, plastic.

plastic cracking—see cracking, plastic.

plastic deformation—see deformation, inelastic.

plastic flow—obsolete term for creep and stress relation. (See also creep; flow, plastic; and stress relaxation.)

plastic hinge—see hinge, plastic.

plastic limit—see limit, plastic.

plastic loss—see creep.

plastic mortar—see mortar, plastic.

plastic or bond fire clay—a fire clay of sufficient natural plasticity to bond nonplastic material; a fire clay used as a plasticizing agent in mortar.

plastic shrinkage—see shrinkage, plastic.

plastic shrinkage cracks—see cracking, plastic.

plasticity—a complex property of a material involving a combination of qualities of mobility and magnitude of yield value; the property of freshly mixed cement paste, concrete, or mortar that determines its resistance to deformation or ease of molding.

plasticity index—see index, plasticity.

plasticize—to produce plasticity or to render plastic.

plasticizer—(1) a material that increases the plasticity of a fresh cementitious repair material; or (2) a substance added to an adhesive to increase softness, flexibility, and extensibility; or (3) a substance added to polymer or copolymer to reduce its minimum film forming temperature or its glass transition temperature.

plate—(1) in formwork for concrete: a flat, horizontal member either at the top or bottom, or both, of studs or posts; a mud sill if on the ground (see also mud sill); and (2) in structural design: a member, the depth of which is substantially less than its length and width. (See also plate, flat and load-transfer assembly.)

plate, deformed—a flat piece of metal, thicker than 1/4 in. (6 mm), having horizontal deformations or corrugations; used in construction to form a vertical joint and provide a mechanical interlock between adjacent sections.

plate, flat—a flat slab without column capitals or drop panels. (See also slab, flat.)

plate, folded—(1) a framing assembly composed of sloping slabs in a hipped or gabled arrangement; and (2) prismatic shell with open polygonal section.

plum—a large random-shaped stone dropped into freshly placed mass concrete to economize on the amount of the other concrete ingredients. (See also concrete, cyclopean.)

plumb—vertical or to make vertical.

pneumatic feed—see feed, pneumatic.

pneumatically applied mortar—see shotcrete.

point count method—method for determination of the volumetric composition of a solid by observation of the frequency with which areas of each component coincide with a regular system of points in one or more planes intersecting intersecting a sample of the solid. (See also linear-traverse method.)

point count method (modified)—the point count method supplemented by a determination of the frequency with which areas of each component of a solid are intersected by regularly spaced lines in one or more planes intersecting a sample of the solid.

point load—see load, point.

point of contraflexure—see point of inflection (preferred term).

point of inflection—the point on the length of a structural member subjected to flexure where the curvature changes from concave to convex or conversely and at which the bending moment is zero; also called “point of contraflexure.”

Poisson’s ratio—see ratio, Poisson’s.

polarizing microscope—see microscope, polarizing.

pole shore—see shore, post.

polishing—(1) abrasion of wearing course aggregates caused by traffic loads and the environment. (2) the use of abrasives to smooth a surface.

polyester—one of a large group of synthetic resins, mainly produced by reaction of dibasic acids with dihydroxy alcohols; commonly prepared for application by mixing with a vinyl-group monomer and free-radical catalysts at ambient temperatures and used as binders for resin mortars and concretes, fiber laminates (mainly glass), adhesives, and the like. (See also concrete, polymer.)

polyester resin—see resin, polyester.

polyethylene—a thermoplastic high-molecular-weight organic compound used in formulating protective coatings or, in sheet form, as a protective cover for cementitious materials during the curing period, or to provide a temporary enclosure for construction operations.

polymer concrete—see concrete, polymer.

polymer cure—the use of heat, radiation, or reaction with chemical additives to change in the properties of a polymeric system into a final, more stable, usable condition.

polymer flooring system—any combination of liquid-polymer products used as sealers, coatings, or mortars for application to concrete for repair, protection, or enhancement.

polymer flooring—a liquid, with or without fillers or reinforcement, that is applied to a substrate and cured by heat or catalysts to form a thermo-set polymer that bonds to and protects the substrate and provides a barrier for containment of chemicals.

polymer mortar—see mortar, polymer.

polymer mortar, conductive—see conductive-polymer mortar.

polymer—a high-molecular-weight organic compound, natural or synthetic, containing repeating units.

polymer-cement concrete—see concrete, polymer-cement.

polymer-modified concrete—see concrete, polymer-cement.

polymerization—the chemical reaction in which two or more molecules of the same substance combine to form a compound containing the same elements and in the same proportions but of higher molecular weight.

polyolefin fibers—see fibers, polyolefin.

polypropylene—highly chemically inert, long-chain synthetic polymer; fibrillated and monofilament fibers for concrete reinforcement. (See also fibers, polypropylene.)

polystyrene resin—see resin, polystyrene.

polysulfide coating—see coating, polysulfide.

polyurethane—reaction product of an isocyanate with any of a wide variety of other components containing an active hydrogen group; used to formulate tough, abrasion-resistant coatings and matrices.

polyvinyl acetate—colorless, permanently thermoplastic resin; usually supplied as an emulsion or water-dispersible powder characterized by flexibility, stability towards light, transparency to ultraviolet rays, high dielectric strength, toughness, and hardness; the higher the degree of polymerization, the higher the softening temperature; may be used in paints for concrete.

polyvinyl chloride—a synthetic resin prepared by the polymerization of vinyl chloride, used in the manufacture of nonmetallic waterstops for concrete.

ponding—the creation and maintaining of a shallow pond of water on the surface of a concrete slab to assist curing; accidental or incidental occurrence of a shallow pond or ponds on a nominally flat surface of concrete; a condition in which a horizontal slab deforms downward between supports.

popcorn concrete—see concrete, popcorn.

popout—the breaking away of small portions of a concrete surface due to localized internal pressure which leaves a shallow, typically conical, depression; small popouts leave holes up to 0.4 in (10 mm) in diameter; medium popouts leave holes 0.4 to 2 in. (10 to 50 mm) in diameter; and large popouts leave holes greater than 2 in. (50 mm) in diameter.

pore—an inherent or induced cavity within a particle or within an object; a discontinuity, essentially circular in cross section, in a coating extending through to the underlying coating or the basis material.

porosity—the ratio, usually expressed as a percentage, of the volume of voids in a material to the total volume of the material including the voids.

port—see injection port.

port adapter—device used to connect an injection hose to a crack or void; may be attached to the concrete surface along a crack or inserted in holes drilled into the concrete.

portland blast-furnace slag cement—see cement, portland blast-furnace slag.

portland cement—see cement, portland.

portland-cement clinker—a clinker, partially fused by pyroprocessing, consisting predominantly of crystalline hydraulic calcium silicates.

portland-cement concrete—see concrete.

portland-pozzolan cement—see cement, portland-pozzolan.

portlandite—the mineral, calcium hydroxide ($\text{Ca}(\text{OH})_2$); occurs naturally in Ireland; equivalent to a product of hydration of portland cement.

porous fill—see drainage fill.

positive displacement—wet-mix shotcrete delivery equipment in which the material is pushed through the material hose in a solid mass by a piston or auger.

positive moment—see moment, positive.

positive reinforcement—see reinforcement, positive.

positive side waterproofing—applying waterproofing material to the side of a structural element subjected to hydrostatic pressure.

post—vertical formwork member used as a support; also known as shore, prop, or jack.

post shore—see shore, post.

post-tensioning—method of prestressing in which internal or external prestressing tendons are tensioned after concrete has hardened.

post-tensioning, bonded—post-tensioned construction in which the annular spaces around the tendons are grouted after stressing, thereby bonding the tendon to the concrete section.

post-tensioning, external—post-tensioned construction in which tensile forces are maintained through anchorages at each end of the exposed tendons.

post-tensioning, unbonded—post-tensioned construction where tendons are permanently prevented from bonding to the concrete after stressing.

potable water—water that is safe for drinking.

pot life—time interval after preparation during which a liquid or plastic mixture is to be used.

pouring (of concrete)—see placement and placing.

powder lance—equipment for cutting concrete with intense heat generated by the reaction between oxygen and powdered metals.

power float—see float, rotary (preferred term).

Powers' spacing factor—see factor, Powers' spacing (preferred term).

pozzolan—a siliceous or siliceous and aluminous material, which in itself possesses little or no cementitious value but will, in finely divided form and in the presence of moisture, chemically react with calcium hydroxide at ordinary temperatures to form compounds possessing cementitious properties; there are both natural and artificial pozzolans.

pozzolan, artificial—materials such as fly ash and silica fume. (See also fly ash, and silica fume.)

pozzolan, natural—a raw or calcined natural material that has pozzolanic properties (for example, volcanic tuffs or pumicites, opaline cherts and shales, clays, and diatomaceous earths).

pozzolanic—of or pertaining to a pozzolan.

pozzolanic-activity index—see index, pozzolanic-activity.

pozzolanic reaction—see pozzolan.

practical coverage—the spreading rate of a coating calculated at the recommended dry film thickness and assuming 15% material loss.

preblended grout—see grout, preblended.

precast—a concrete member that is cast and cured in other than its final position; the process of placing and finishing precast concrete. (See also cast-in-place.)

precast concrete—see concrete, precast.

precast pile—see pile, precast.

precompressed zone—see zone, precompressed.

preconditioning—any preliminary exposure of a material to the influence of specified atmospheric conditions for the purpose of favorably approaching equilibrium with a prescribed atmosphere.

precurving period—see period, presteamer (preferred term).

predampening—adding water to aggregate that will be used in dry-mix shotcrete to bring the moisture content of the aggregate to a specified amount, usually 3 to 6%.

prefire—to raise the temperature of refractory concrete under controlled conditions before placing it in service.

preformed foam—see foam, preformed.

premature stiffening—see set, false and set, flash.

prepackaged—dry ingredients of grout, mortar, and concrete mixtures in packages, requiring only the addition of water to produce grout, mortar, or concrete.

prepacked concrete—see concrete, preplaced-aggregate and concrete, colloidal.

preplaced-aggregate concrete—see concrete, preplaced-aggregate.

pre-post-tensioning—a method of fabricating prestressed concrete in which some of the tendons are pretensioned and a portion of the tendons are post-tensioned.

preservation—the process of maintaining a structure in its present condition and arresting further deterioration. (See also rehabilitation; repair; and restoration.)

preset period—see period, presteamming (preferred term).

preshrunk concrete (mortar, grout)—see concrete (mortar, grout), preshrunk.

presplitting—a procedure in which hydraulic splitters, water pressure pulses, or expansive chemicals are used in bore holes drilled at points along a predetermined line to induce a crack plane for the removal of concrete.

pressed edge—see edge, pressed.

pressure—

pressure, form—lateral pressure acting on vertical or inclined formed surfaces, resulting from the fluid-like behavior of the unhardened concrete confined by the forms.

pressure, lateral—see pressure, form.

pressure line—locus of force points within a structure resulting from combined prestressing force and externally applied load.

presteamming period—see period, presteamming.

prestress—to place a hardened concrete member or an assembly of units in a state of compression before application of service loads; the stress developed by prestressing, such as by pretensioning or post-tensioning. (See also concrete, prestressed; steel, prestressing; pretensioning; and post-tensioning.)

prestress, effective—the prestressing force at a specific location in a prestressed-concrete member under the effects of service dead load or total service load after losses of prestress have occurred.

prestress, final—see stress, final.

prestress, initial—the prestressing stress (or force) applied to the concrete at the time of stressing.

prestress, transverse—prestress that is applied at right angles to the longitudinal axis of a member or slab.

prestressed concrete—see concrete, prestressed.

prestressing, nonsimultaneous—the post-tensioning of tendons individually rather than simultaneously.

prestressing, partial—prestressing to a stress level such that, under design loads, tensile stresses exist in the precompressed tensile zone of the prestressed member.

prestressing steel—see steel, prestressing.

pretensioning—a method of prestressing reinforced concrete in which the tendons are tensioned before the concrete has hardened.

pretensioning bed (or bench)—the casting bed on which pretensioned members are manufactured and which resists the pretensioning force prior to release.

prewetting—adding a portion of the mixing water to dry-mix shotcrete materials in the delivery hose at some distance from the nozzle.

primary crusher—see crusher, primary.

primary nuclear vessel—interior container in a nuclear reactor designed for sustained loads and for working conditions.

primer—the first coat of a material applied following surface preparation; serves to improve the bond of subsequent coats and may have corrosion inhibitive properties for use on metals.

principal planes—see stress, principal.

principal stress—see stress, principal.

probabilistic design—see design, probabilistic.

probe, penetration—a device for obtaining a measure of the resistance of concrete to penetration; customarily determined by the distance that a steel pin is driven into the concrete from a special gun by a precisely measured explosive charge.

process—

process, centrifugal—a process for producing concrete products, such as pipe, that

uses an outer form that is rotated about a horizontal axis and into which concrete is fed by a conveyor; also called spinning process. (See also concrete, centrifugally cast; process, dry-cast; packerhead; process, tamp; and process, wet-cast.)

process, dry—in the manufacture of cement, the process in which the raw materials are ground, conveyed, blended, and stored in a dry condition. (See also process, wet.)

process, dry-cast—a process for producing concrete products, such as pipe, using low-frequency high-amplitude vibration to consolidate dry-mix concrete in the form. (See also centrifugal process; process, dry-cast, packerhead; tamp process; process, wet-cast.)

process, dry-tamp—see packing, dry.

process, packerhead—a process for producing concrete pipe that uses a rotating device that forms the interior surface of the pipe as concrete is fed into the form from above. (See also centrifugal process; process, dry-cast; tamp process; process, wet-cast.)

process, tamp—a process for producing concrete products, such as pipe, that uses direct mechanical action to consolidate the concrete by the action of tampers that rise automatically as the form is rotated and filled with concrete from above. (See also process, centrifugal; process, dry-cast; process, packerhead; and process, wet-cast.)

process, wet—in the manufacture of cement, the process in which the raw materials are ground, blended, mixed, and pumped while mixed with water; the wet process is chosen where raw materials are extremely wet and sticky which would make drying before crushing and grinding difficult. (See also process, dry.)

process, wet-cast—a process for producing concrete items, such as pipe, that uses concrete having a measurable slump, generally placed from above, and consolidated by vibration. (See also centrifugal process; process, dry-cast; process, packerhead; and tamp process.)

production lot—that part of one manufacturer's production made from the same nominal raw material under essentially the same conditions and designed to meet the same specifications.

profilometer—measuring equipment used to determine a surface's profile in order to quantify

its roughness.

promoter—see catalyst (preferred term).

promoter, flow—substance added to coating to enhance brushability, flow, and leveling.

proof stress—see stress, proof.

prop—see post and shore.

proportional limit—see limit, proportional.

proportion—to select proportions of ingredients to make the most economical use of available materials to produce mortar or concrete of the required properties. (See also mixture.)

proportioning—selection of proportions of ingredients to make the most economical use of available materials to produce cementitious repair materials with the required properties. (See also mixture.)

proprietary—made and marketed by one having the exclusive right to manufacture is and dtribute.

protected paste volume—the portion of hardened cement paste that is protected from the effects of freezing by proximity to an entrained air void. (See also factor, Philleo and factor, spacing.)

protection—the process of maintaining a concrete structure in its present or restored condition by minimizing the potential for deterioration or damage in the future. (See also maintenance and preservation.)

protection period—the required time during which the concrete is maintained at or above a specific temperature to prevent freezing of the concrete or ensure the necessary strength of development.

proving ring—see ring, proving.

psychrometer, sling— a psychrometer containing independently matched dry- and wet-bulb thermometers, suitably mounted for manually swinging through the ambient air, to

simultaneously indicate dry- and wet-bulb temperatures.

pugmill—see mixer, horizontal-shaft (preferred term).

pull-off test—see test, tensile pull-off.

pullout test—a test that measures the force required to extract an embedded insert from a concrete mass; the measured ultimate pullout load is used to estimate the in-place compressive strength of the concrete.

pulse-echo—a nondestructive testing method based on stress wave propagation; the presence and position of a reflector, such as a crack or void, are indicated by the echo amplitude and time.

pulse velocity—See velocity, pulse.

pultrusion—process by which a molten or curable resin and continuous fibers are pulled through a die of a desired structural shape of constant cross section, usually to form a rod or tendon.

pulverized-fuel ash (pfa)—see fly ash (preferred term in the U.S.; pulverized-fuel ash is used in the UK).

pumice—a highly porous and vesicular lava usually of relatively high silica content composed largely of glass drawn into approximately parallel or loosely entwined fibers, which themselves contain sealed vesicles.

pumicite—naturally occurring finely divided pumice and glass shards.

pump, concrete—an apparatus that forces concrete to the placing position through a pipeline or hose.

pumpability—a measure of the properties of a particular grout mix to be pumped as controlled by the equipment being used, the formation being injected, and the engineering objective limitations.

pumped concrete—see concrete, pumped.

pumping (of pavements)—the ejection of water, or water and solid materials, such as clay or silt, along transverse or longitudinal joints and cracks, and along pavement edges caused by

downward slab movement activated by the passage of loads over the pavement after the accumulation of free water on or in the base course, subgrade, or subbase.

pumping test—a field procedure used to determine in situ permeability or the ability of a formation to accept grout.

punching shear—failure of a base or slab when a heavily loaded column punches a hole through it.

punching shear stress—shear stress calculated by dividing the load on the slab that is transferred to the column by the product of the perimeter and the thickness of the base or cap or by the product of the perimeter taken at 1/2 the slab thickness away from the column and the thickness of the base or cap.

punning—an obsolete term designating a light form of ramming. (See also ramming and tamping.)

purlin—in roofs, a horizontal member supporting the common rafters. (See also beam.)

putty—a plaster composed of quicklime or hydrated lime and water with or without plaster of paris or sand.

pyrite—a mineral, iron disulfide (FeS_2), that, if it occurs in aggregate used in concrete, can cause popouts and dark brown or orange-colored staining.

pycnometer—a vessel for determination of specific gravity of liquids or solids.

pyrometric cone—see cone, pyrometric.

pyrometric-cone equivalent (PCE)—the number of that cone whose tip would touch the supporting plaque simultaneously with that of a cone of the refractory material being investigated when tested in accordance with a specified procedure such as ASTM C 24.